Burn Awareness Week

February 5-11, 2006

Fire Commissioner's Office Campaign Kit

Alberta
Municipal Affairs

Burn Awareness Week Campaign Kit

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Links

BC's Burn Awareness Week Children's activity sheets
http://www.burnfund.org/BAW/

Alberta Burn Rehabilitation Society
http://www.abrs.ca/index.html

For a hard copy version of the campaign kit or for more information on the Burn Awareness Week campaign visit the Fire Commissioner's Office website at www.municipalaffairs.gov.ab.ca/fco or phone Te-Jay Smart at (780-644-4692).

Burn Statistics

Between April 1, 2001 and March 31, 2002, there were 550 hospitalizations and 8,563 emergency department visits with a diagnosis of a burn, sunburn or frostbite in Alberta. Burns caused by scalds and fire were the two most common types of burns. The body areas most frequently affected by burns differ between patients hospitalized and those seen in emergency departments. Burns to lower limb(s) (37.1%) and the face/head/neck (32.0%) were the most common for hospitalized patients. The wrist/hand (35.1%) was the body area most affected for emergency department visits. Thirty-one per cent of hospitalizations and 48.5% of emergency department visits due to burns were caused by a hot substance or object, caustic or corrosive material, or steam. Males accounted for 70% of patients admitted to hospitals for burn-related injuries, and 59% for emergency department visits. Adults in the 35-44-age category were most frequently hospitalized for burn-related injuries, whereas children under six were most frequently seen in the emergency department[1].

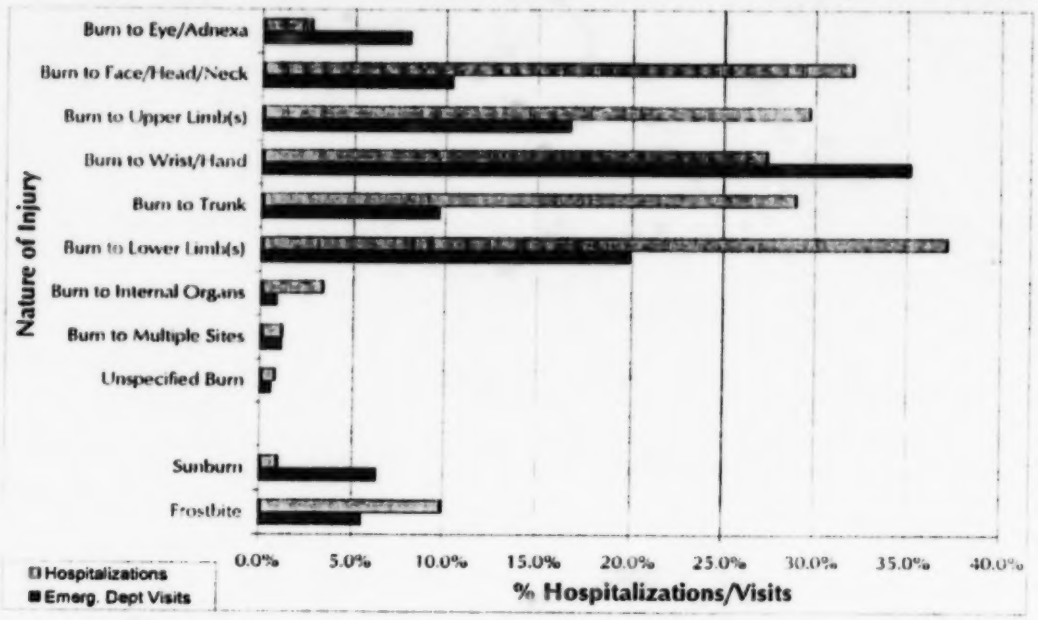
Burn Facts

- Hot tap water in the bathroom and heated food and drink in the kitchen cause most burn injuries to young children.
- In older adults, burns are most often caused by hot liquids/steam, clothing ignited by the stove, and smoking while impaired by medication or alcohol.
- Overall, males are three times more likely than females to experience burn related hospitalizations.
- 75 to 80 per cent of burn injuries happen in and around the home.

[1] Alberta Centre of Injury Control and Research, February 2004 Newsletter

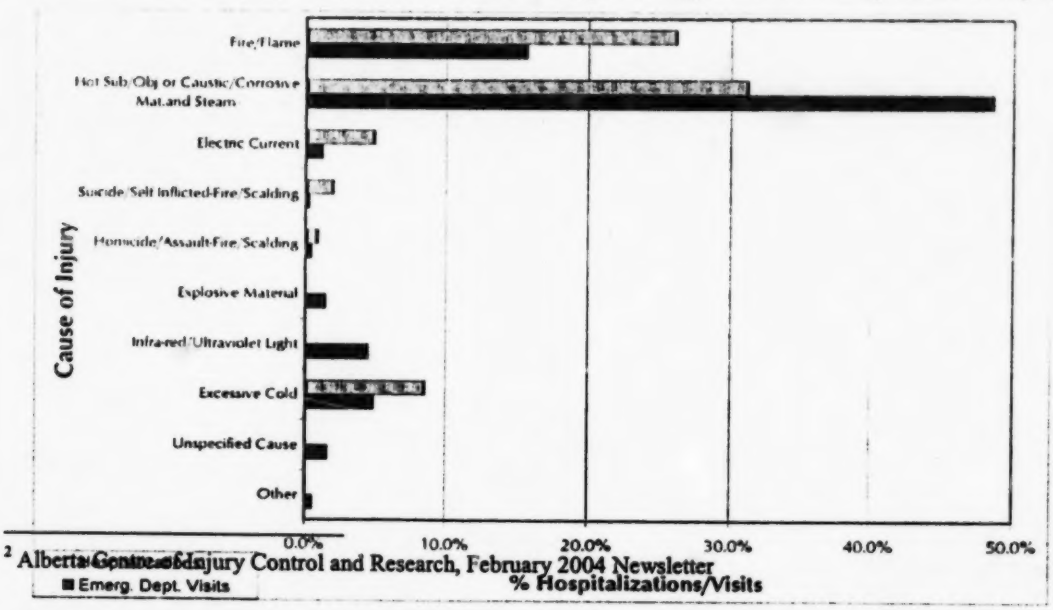
Burn Injuries in Alberta
April 1, 2001- March 31, 2002

Percent of Burn Injury Hospitalizations and Emergency Department Visits by Nature of Injury



Note: If a hospitalization/visit resulted from an injury to more than one body area/nature of injury, each type will be counted once.

Percent of Burn Injury Hospitalizations and Emergency Department Visits by Cause of Injury



Burn Basics

What is a burn?
Very simply, a burn is damage to the skin and underlying tissue caused by heat, chemicals or electricity. Burns damage or destroy skin cells. Deeper burns may involve the fat, muscle or bone. Scalds result when one or more layers of skin are destroyed by contact with hot liquid or steam.

The depth of injury depends on two things: the temperature to which the skin is exposed and the length of time the skin is exposed to the burning substance. The higher the temperature, the shorter the time required to inflict a burn injury.

Water temperature	Time required for a third-degree burn to occur
68°	1 second
64° C	2 seconds
60° C	5 seconds
56° C	15 seconds
52° C	1 minute
51° C	3 minutes
48° C	5 minutes
37° C	Safe temperature for bathing

Reference: Moritz, A.R., Herriques, F.C.Jr. Studies of thermal injuries: II The relative importance of time and surface temperature in the causation of cutaneous burns. Am J Pathol 1947;23:695-720.

Remember:
Children and older adults, by virtue of their thinner skin, sustain severe burns at lower temperatures and in less time than younger adults. For example, children and seniors exposed for just three seconds to average home hot water (60° Celsius) will sustain third-degree burns requiring hospitalization. In comparison, younger adults would have to be exposed for up to five seconds to sustain the same burn.

Burn Characteristics

Burns range in severity from minor injuries that require no medical treatment to serious life-threatening injuries.

Degree of Burn Injuries	Characteristics of Injuries
First degree (Superficial) • Causes: sunburn, minor scalds • Generally heals in three to five days with no scarring	• Minor damage to the skin • Color – pink to red • Painful • Skin is dry without blisters
Second degree (Partial thickness) • Damages but does not destroy top two layers of the skin • Generally heals in 10 to 21 days • Does not require skin graft	• Skin is moist, wet and weepy • Blisters are present • Color – bright pink to cherry red • Lots of swelling • Very painful
Third degree (Full thickness) • Destroys all layers of the skin • May involve fat, muscle and bone • Will require skin graft for healing*	• Skin may be very bright red or dry and leathery, charred, waxy white, tan or brown • Charred veins may be visible • Cannot feel touch in areas of full thickness injury

*Except for very small burns (about the size of a quarter), full-thickness burns will require a skin graft to heal. The patient is taken to the operating room where all the dead tissue is surgically removed. Skin is taken from an unburned or healed part of the body and grafted or transplanted to the clean burn area. In seven to 14 days, this grafted skin adheres to the area and becomes the person's permanent skin. The donor site (where the skin was taken from) is treated like a partial thickness burn and heals within one to 14 days.

Burn Hazards and Prevention Tips

1. Scalds

a) Tap-water scalds

Tap-water scalds are 100% preventable, but very common among young children, older adults and people with disabilities. They are often more severe than scalds related to cooking. Children, seniors and the disabled are less likely to survive burn injuries, usually spend longer in hospital, and have more difficulty recovering.

Scald scenarios

Children are most often scalded by tap water when they:

- are left unattended in the bathroom for even a brief time
- are placed in water that is too hot
- are bathed by an inexperienced caregiver (babysitter or older sibling)
- are in the tub when another child turns on the hot water
- fall into the tub

Older adults and people with disabilities are most often scalded by tap water when:

- they slip or fall in the tub or shower
- a caregiver fails to recognize that the water is too hot
- water temperature fluctuates due to running water in other parts of the home
- a faucet or plumbing fixture malfunctions and the person is unable to escape a sudden burst of scalding water

Safety tips to prevent tap-water scalds

- Adequate and constant supervision is the single most important factor in preventing tap-water scalds.
- Provide constant adult supervision of young children, anyone who may experience difficulty removing themselves from hot water, or people who may not recognize the danger in turning on the hot water.
- Do not leave the bathroom unattended while the tub is filling.
- If you must leave the bathroom, take the child or dependent person with you.
- Fill the tub to desired level and turn the water off before getting in. Run cool water first, then add hot. Turn the hot water off quickly. This can prevent scalding in the event that someone falls in while the tub is filling.
- Mix the water thoroughly and check the temperature by moving your elbow, wrist or spread fingers through the water before allowing someone to get in. The water should feel warm to the touch. The safest temperature for bathing is about 37 degrees Celsius.
- Turn the faucet to the COLD position when not in use if the tub has a single faucet handle. Clearly mark the HOT water position on faucets.
- Do not allow young children or a person with a mental impairment to adjust the water temperature.

- When bathing young children, seat them facing away from faucets and so they cannot reach the faucet. Turn the faucet to the COLD position.
- Install grab bars and non-slip flooring or mats in tubs and showers if someone is unsteady or weak. Use a shower chair or stool when bathing or showering if standing unassisted is a problem.
- Provide a way to call for help (bell or whistle) for people who may need assistance or may be unable to remove themselves from the tub or shower in case of emergency.
- Avoid flushing toilets, running water, or using the dishwasher or washing machine while anyone is showering to avoid sudden fluctuations in water temperature.
- Consider keeping the door closed when the bathroom is not in use.
- Reinforce these recommendations with babysitters and other care providers.
- Install anti-scald devices, which are available from hardware stores.

Anti-scald devices, anti-scald aerators, and scald guards are heat-sensitive devices that stop or interrupt the flow of water when it reaches a pre-determined safe temperature, preventing hot water from coming out of the tap before scalding occurs. These devices will not allow the faucet to become fully operational until the water temperature is reduced to a safe level. Some devices allow the resident to preset a comfortable maximum temperature to eliminate the risk of scalding. Whole house anti-scald mixing valves installed in a hot water line are also available.

b) Kitchen scalds

Cooking-related scalds are common in all age groups, but are especially serious for young children, older adults and people with disabilities.

Kitchen scald scenarios
Children may get burned when they upset hot beverages, grab dangling appliance cords or pot handles, or pull on hanging tablecloths. Adults can receive cooking-related scalds from hot liquid spills and hot oil spatters while deep-frying.
Although these burns may cover a smaller surface area than tap water scalds, they are often deeper because of the higher temperature, and therefore more likely to need surgical skin grafting. These injuries usually occur both in kitchens and in dining areas of the home.

Safety tips to prevent scalds from food and beverages:
In the kitchen
- Establish a safe area, out of the traffic path between the stove and sink, where children can safely play but still be supervised. Place young children in high chairs or play pens at a safe distance from counter or stovetops, hot liquids, hot surfaces or other cooking hazards while preparing or serving food.

- Child walkers can be extremely dangerous in this regard and should never be allowed in kitchens or bathrooms. Infants in child walkers have increased mobility and height making it easier for them to grab dangling cords or pot handles.
- Provide safe toys for children — not pots, pans and cooking utensils. Young children are unable to distinguish between a "play" pot and one on the stove.
- Cook on back burners when young children are present.

- Keep all pot handles turned back, away from the stove edge. All appliance cords need to be kept coiled and away from counter edges. Curious children may reach up and grab handles or cords. Cords may also become caught in cabinet doors, causing hot food and liquids to spill onto you or others.
- The grease in deep fat fryers and cookers can reach temperatures higher than 200 degrees Celsius (400 deg. Fahrenheit) and cause serious burns in less than one second. Use a temperature controlled deep fryer to prevent cooking oil from catching fire.
- If young children want to help prepare meals, give them something cool to mix in a location away from the cooking area. Do not allow a child to stand on a chair or sit on the counter next to the stove.
- Children should not be allowed to use cooking appliances until they are tall enough to reach cooking surfaces safely. As children get older and taller and assume more cooking responsibilities, teach them safe cooking practices.
- Check all handles on appliances and cooking utensils to guarantee they are secure.
- When removing lids from hot foods, remember that steam may have accumulated. Lift the lid away from your face and arm.
- Consider the weight of pots and pans. Attempt to move only those items you can easily handle.
- Wear short sleeves or tight-fitting clothing while cooking.
- Always use oven mitts or potholders when moving pots of hot liquid or food.
- Keep pressure cookers in good repair and follow manufacturer's instructions.
- Avoid using area rugs in cooking areas, especially near the stove. If area rugs are used, ensure they have non-slip backing to prevent falls and possible scalds.

It takes less than one second for a third-degree burn to occur from these cooking methods:

COOKING METHOD	APPROXIMATE TEMPERATURE (DEGREES IN CELSIUS)
Deep frying	200-260
Baking	200
Frying	148
Boiling	100
Electric Crock Pot	93
Hot Beverages	71-82

In the dining area

- During mealtime, place hot items in the centre of the table, at least 25 centimeters from the table edge.
- Use non-slip placemats instead of tablecloths if toddlers are present. Young children may use the tablecloth to pull themselves up, causing hot food to spill down onto them. Tablecloths can also become tangled in crutches, walkers or wheelchairs, causing hot liquids to spill.

Hot beverages:

- Never drink or carry hot liquids while holding or carrying a child. Quick motions (reaching or grabbing) may cause the hot liquid to spill and cause a burn.

- Do not make hot coffee, tea or hot chocolate in a mug that a child normally uses. Consider using mugs with tight-fitting lids, like those used for travel, when children are present.
- Do not place hot liquids on low coffee or end tables that young children can reach.

Special consideration for people with mobility concerns:

- If it is necessary to move hot liquids while using a wheelchair, place a large, sturdy tray with a solid lip in your lap to decrease the risk of lap burns.
- A tray in the lap may also prevent burns from hot foods or beverages if someone is unsteady or shaky.
- Use a serving cart to transfer food from the stove to the table instead of carrying it.
- Consider alternate cooking equipment (slow cookers, toaster ovens or microwaves) placed on lower counters or tables if the stove or oven is too high to reach safely. Be aware this may create a burn hazard if young children are present.

c) Microwave scalds

In many families, children are permitted to use the microwave but not other heating appliances because microwaves are considered safer than conventional ovens and stoves. However, microwaves heat food and liquids to very high temperatures, and can cause burns from spills, splashes and the release of steam. The face and upper body are the most common areas burned on children. The hands, arms, abdomen and legs are more frequently injured with adults.

<u>Safety tips to prevent microwave scalds</u>

- Read and follow manufacturer's instructions for your microwave.
- Place microwaves at a safe height, within easy reach, for all users to avoid spills. All users should be tall enough to reach the microwave oven door, easily view the cooking area, and handle the food safely. Microwaves installed above counters or stoves can be a scald hazard for anyone.
- Children under seven should not operate the microwave unless they are closely supervised. Instruct and supervise older children.
- After heating formula or milk in baby bottles, mix well and test on the back of a hand or inner wrist before feeding.
- Steam builds rapidly in covered containers and can easily result in burns to the face, arms and hands. Puncture plastic wrap or use vented containers to allow steam to escape while cooking. Or, wait at least one minute before removing the cover. When removing covers, lift the corner farthest away from your face and arm.
- Steam in microwave popcorn bags can cause burns. Follow package directions, allow to stand one minute before opening, and open the bag away from the face.
- Foods heat unevenly in microwaves. Remember, jelly and cream fillings in pastries may be extremely hot, even though outer parts of the food feel only warm.
- Microwaved foods and liquids may reach temperatures greater than boiling without the appearance of bubbling. Stir and test food thoroughly before serving or eating.

d) Other causes of scald burns and prevention pointers

- Potpourri pots, especially those filled with oil, reach very high temperatures. Place potpourri pots where they cannot be tipped and are out of the reach of children.
- Replace hot steam vapourizers with a cool mist humidifier or vapourizer. If you must use a steam vapourizer, place it on a level surface to prevent tipping and keep it out of the reach of children. Allow the water to cool before emptying the vapourizer.
- Radiator scalds are common injuries, primarily to adult males. When a vehicle is running and the radiator is working properly, the temperature of the fluid is normally between 95 and 105 degrees Celsius, which is hot enough to cause serious burns in less than one second. Radiator caps are clearly marked with warnings not to remove the cap when the engine is hot. When the radiator overheats, the temperature increases drastically and pressure builds. When the cap is removed, the liquid boils or even explodes out, causing serious injuries. Faces, hands, arms and chests are the most common areas burned. In addition to scalds, radiator fluid contains antifreeze that may cause chemical burns. Prevention is simple—do not remove the cap until the engine has cooled.

2. Fire Burns

Although approximately 60% of fire victims die from smoke inhalation, burns are still a major cause of fire deaths and fire injuries. The survival of these burn injury patients in hospitals is further reduced if they have suffered smoke inhalation. From 1999 to 2003 there were 1,750 fire-related injuries in Alberta. Burns accounted for 42% of these injuries. During the same period, 176 fire deaths occurred, 19% of which were caused by burns.

Fires are the second most frequent type of burn injury to Albertans, after scalds. Burns can be sustained during fires from direct contact with flames or hot objects, or through the inhalation of super-heated gases that can damage tissues in the airways and lungs. Flame burns, for example, can be caused by clothing catching fire from a stove burner, match, candle or exposure to an open flame, such as during a fire emergency. Seniors are a high-risk group for fire injuries. This risk is associated with illnesses and impairments such as blindness or deafness, and in those older adults who choose to live alone.

Many older adults take multiple medications, the interaction of which can cause a variety of side effects, including confusion, that may alter the decision making process and increase the potential for scald and fire injuries. Impairments may also lead to an increased likelihood of accidentally starting a fire, not detecting a fire, and not being able to escape a fire.

<u>Safety tips to prevent fire burns</u>

- Prevent children from playing with matches, lighters, and open flames (e.g. candles, furnaces, and water heaters).
- Do not overload electrical outlets.
- Keep portable space heaters at least one meter (three feet) away from everything, including yourself. Do not use with extension cords.
- Practice safety while smoking. Use large, deep ashtrays, and dispose of ashes in the toilet. Never smoke in bed or when impaired by medication or alcohol.
- Practice a fire escape plan with your children.

- Teach children to STOP, DROP, & ROLL if their clothes catch fire, and to cool a burn in water.
- Gasoline is made to explode! Gasoline has only one function — to fuel an engine. A spark, a lit cigarette or a match can ignite gasoline vapours and cause a major fire and/or burn injury.
- Never leave cooking unattended. If flames erupt while deep-frying, smother the fire by carefully sliding a lid or larger pan over the deep fryer and then turn off the heat. Never carry the burning pot/pan or pour water on a cooking oil fire.
- Mount candles on non-combustible holders and keep away from other combustibles.
- Repair or replace frayed or worn-out electrical cords.
- Fires caused by cooking are the leading cause of fire-related injuries in the elderly. When cooking, wear tight-fitting sleeves to help avoid the sleeve touching the hot element or flame.
- Those who smoke must also exercise care to prevent lit smoking materials from falling on upholstered furniture or bedding.
- Install, maintain and test smoke alarms. Smoke alarms are simply early warning devices to alert people to escape from the dangers of smoke and fire before conditions become life threatening. Install at least one smoke alarm on every level of your home, preferably on the ceiling outside every sleeping area. If there are smokers in the household, install smoke alarms in bedrooms. Test smoke alarms once a month to ensure they are in working condition. Replace batteries once a year or when the alarm makes a low-battery "chirping" sound.
- The Fire Commissioner's Office recommends that the first line of defense against fire and smoke danger is fire prevention. Smoke alarms are the second line of defense to provide early warning of smoke and fire danger. Thirdly, a well-rehearsed fire escape plan can minimize injuries and significantly increase chances of survival.

3. Electrical Injury

DO NOT touch the injured person until the source of power has been disconnected. Primary concerns are airway, breathing, circulation, and cervical spine immobilization. Electricity can cause the heart and breathing to stop. Assess for injuries and begin first aid. Internal injuries may not be evident as electricity can cause severe damage inside the body when it enters and exits. Call 9-1-1.

4. Chemical Injury

With a cloth, gently brush any dry chemicals off the skin. Remove clothing and contact lenses, if necessary, before flushing the affected area with water for at least 20 minutes or until pain stops. Use caution not to flush chemicals on to other parts of the body. Read the container label or consult with the Poison Control Center before administering first aid.

If You Are Burned

1. Cool burn with water

Immediately pour cool water on burns or soak them for at least three to five minutes (30-40 minutes for chemical injury). DO NOT USE ICE. Ice may cause more damage by sticking to the burn and removing skin. For scalds, immediately remove hot, wet clothing.

2. No ointments or butter

Use only cool water on burns. Ointments, butter, creams and salves allow the burn to retain heat, may cause infection, and may hinder medical evaluation.

3. Cover the burn

Apply a soft, clean, dry dressing, bandage or sheet to the burned area. Do not break blisters - this could let germs into the wound. Cover burn victims and keep them warm.

4. Stop, Drop and Roll

If your clothing catches on fire… "STOP, DROP, & ROLL." Flames must be smothered.

When should I see a doctor?

For adults, if the burn is larger than the size of a quarter, see a doctor. Infants, young children and the elderly are endangered by even small burns. The hands, feet, face (especially eyes) and genitalia are critical areas. Electricity, chemicals and smoke or toxic fumes complicate a burn injury. Certain existing conditions, such as diabetes, and mental and physical impairment, can also cause complications.
(Source: Burn Awareness Coalition, Encino, California and The American Burn Association)

Fire & Burn Safety Quiz!

YES/NO	All of my family members know to dial 9-1-1 or the fire department in an emergency.
YES/NO	I test the smoke alarms in my home once a month.
YES/NO	I change the batteries in my smoke alarms once a year, or sooner if necessary.
YES/NO	Each room in my home has two clear exits.
YES/NO	Every sleeping area and each level of my home is equipped with a working smoke alarm.
YES/NO	My family has developed and practices a home fire escape plan.
YES/NO	My house numbers can be seen from the street by emergency responders.
YES/NO	Household chemicals, matches and cigarette lighters are stored out of the reach of children.
YES/NO	Electrical cords are not damaged and are used properly.
YES/NO	I have a fire extinguisher in my kitchen and know how to use it.
YES/NO	No combustible materials are stored near cooking areas or heating appliances.
YES/NO	My kitchen vent-hood is clean and properly maintained.
YES/NO	The lint collector on my clothes dryer is inspected and cleaned before each use.
YES/NO	I generally practice good housekeeping habits in keeping work areas, the garage, heater closets, etc., free of potential fire hazards.
YES/NO	Gasoline is kept in a labeled and approved safety container and is stored in a locked garage or storage shed.
YES/NO	After fuelling my lawn mower, I move it away from the gasoline vapours before I start it.
YES/NO	Paints, thinners and other flammable liquids are stored in their original containers, and used in well-ventilated areas away from heat, sparks, or flame.
YES/NO	I never leave food cooking on a stove or barbeque unattended.
YES/NO	I never smoke when drowsy or when in bed.
YES/NO	I dispose of cigarette butts in ashtrays or metal containers with sand — not in planters, trashcans, grass, at the roadside, or any other place where they may start a fire.
YES/NO	Before lighting my gas barbeque, I check for gas leaks by applying a soapy solution over the connections and hose.
YES/NO	I never allow young children to play around or use the barbeque.
YES/NO	I know that the safer way to enjoy fireworks is to attend a professional display.
YES/NO	I check with the local fire department about regulations and permits before I burn grass, trash or brush.
YES/NO	If a burn injury happens, I know to cool it **immediately** in water for 10 to 15 minutes, and seek medical help.
YES/NO	I build my campfire downwind, away from the tent and dry vegetation, and NEVER use gasoline or other flammable/combustible liquids to start the fire.
YES/NO	I never leave children unattended or playing near a campfire.
YES/NO	Before leaving the campsite, I put the fire out by slowly adding water and stirring, and then testing it for heat.
YES/NO	I never cook or use matches, candles or open flames inside a camping tent.
YES/NO	Before going on vacation, I ensure all stoves and electrical appliances/equipment have been turned off or disconnected.

If you answered NO to any of the above questions, you and your family may be in great danger from fire or a fire burn injury. Please contact your local fire department to correct the hazard or for more information. Check out the Fire Commissioner's Office website at www.municipalaffairs.gov.ab.ca/fco to learn more about Fire/Burn Safety.